

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte WILLIAM R. KENNEDY and JOHN M. KENNEDY

Appeal No. 2006-0128
Application No. 10/003,353

ON BRIEF

MAILED

JUL 31 2006

PAT. & T.M. OFFICE
BOARD OF PATENT APPEALS
AND INTERFERENCES

Before FRANKFORT, GROSS, and BAHR, Administrative Patent Judges.

FRANKFORT, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1 through 9, 14 and 31 through 45, all of the claims remaining in the application. Claims 10 through 13 and 15 through 30 have been cancelled.

Appeal No. 2006-0128
Application No. 10/003,353

Appellants' invention relates to mine doors and, more particularly, to providing a mine door leaf that is relatively lightweight for its size, has substantial torsional rigidity, has substantial resistance to stress, is fire-resistant, and can be economically fabricated. As noted on page 1 of the specification, in general, a mine door leaf of the invention comprises

a central core of a solidified composition, outer panels on opposite faces of the core, the core having a force-transmitting relationship with said panels, the panels and filling constituting an integrated stress-resistant structure, and one or more hinge components on the leaf.

Independent claims 1, 38 and 41 are representative of the subject matter on appeal and a copy of those claims can be found in the "Claim Appendix" attached to appellants' brief.

The prior art references relied upon by the examiner in rejecting the appealed claim are:

Kennedy et al. (Kennedy)	Re 36,853	Sep. 5, 2000
Zen	6,481,179	Nov. 19, 2002 (filed Dec. 14, 2000)

Appeal No. 2006-0128
Application No. 10/003,353

Claims 1 through 9, 14 and 31 through 45 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kennedy in view of Zen.

Rather than attempt to reiterate the examiner's commentary with regard to the above-noted rejection and the conflicting viewpoints advanced by appellants and the examiner regarding that rejection, we make reference to the answer (mailed May 18, 2005) for the examiner's reasoning in support of the rejection, and to appellants' brief (filed February 25, 2005), reply brief (filed June 10, 2005) and corrected brief (also filed June 10, 2005) for the arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to appellants' specification and claims, to the applied prior art references, and to the respective positions articulated by appellants and the examiner. As a consequence of our review, we have made the determinations which follow.

In rejecting claims 1 through 9, 14 and 31 through 45 under 35 U.S.C. § 103(a), the examiner has determined that Kennedy

Appeal No. 2006-0128
Application No. 10/003,353

discloses a mine door installation in a passageway of a mine, comprising a doorway frame in the mine passageway including columns (43) yieldable to accommodate convergence without permanent deformation, said doorway frame supporting a mine door leaf (27 or 29) mounted on hinges (115, 117) for swinging between open and closed positions, the door leaf being constructed of sheet metal and having at least four reinforced edges, with the doorway frame directly supporting two of the edges when the door is in the closed position and another two edges being substantially free of direct support. What Kennedy does not show or disclose relative to appellants' claimed subject matter is a door leaf having a central core of a solidified composition (e.g., fire-resistant polyurethane foam material) and outer metal panels on opposite faces of such a core, wherein the core has a force-transmitting relationship with the panels constituting the panels and core as an integral stress-resistant structure resistant to stresses to which the door leaf is subjected in a mine.

To address such deficiencies in Kennedy, the examiner turns to Zen, noting that this patent discloses a steel clad door leaf (1) comprising a reinforcing frame (2), a central core (4) formed

of a solidified, fire-resistant polyurethane foam material, and outer steel cladding panels (3) on opposite faces of the core, wherein the core has a force-transmitting relationship with the panels constituting the panels and core as an integral stress-resistant structure that is extremely strong, yet can be produced at very low cost. The examiner also notes that the frame structure (2) of Zen includes integrally molded bracing or rebar-type elements (12) that provide at least indirect mechanical coupling of the core material to the steel cladding panels (3). In the examiner's view, it would have been obvious to one of ordinary skill in the art at the time of appellants' invention to replace the door panels (27, 29) of Kennedy's mine door system with metal clad door panels like those in Zen. The examiner considers that it would have been within the skill of a worker in the art to select such well known lightweight and strong door panels for use in Kennedy based on the fact that they provide the strength and durability of steel at a very low cost. See, particularly, pages 5 and 6 of the examiner's answer.

Appellants' contention (brief, page 8) that Zen fails to discuss the weight and strength properties of the insulation and panels therein and therefore does not provide "substantial

evidence" to support the examiner's rejection, is not well founded. In our view, it would have been readily apparent to one of ordinary skill in the art from a reading of Zen that the steel clad door (1) therein would be strong and rigid, while at the same time being relatively lightweight, fire-resistant, and inexpensive to manufacture. Thus, given the teachings of Zen and the requirements in Kennedy for a door system that is lightweight, yet sturdy and resistant to flexure (col. 1, lines 34-36), we agree with the examiner that a steel clad door like that taught in Zen would have been an obvious selection for one of ordinary skill in the art to have made for use in the mine door system of Kennedy.

In making the arguments bridging pages 6-9 of the brief, appellants seem to have lost sight of the fact that the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference, nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art at the time of appellant's invention. See, In re Keller, 642 F.2d 413, 425, 208

USPQ 871, 881 (CCPA 1981). In this case, for the reasons noted above, we have no doubt that the combined teachings of the applied patents would have provided ample suggestion for their combination as posited by the examiner.

Dependent claim 2 adds to claim 1 on appeal that the force-transmitting relationship between the core and the door panels is established by "adhesion and mechanical coupling of the core to the panels." Given the manner of constructing the steel clad door of Zen (col. 2, lines 18-23 and col. 2, line 66 - col. 3, line 4), we find that, just like in appellants' door panel, the polyurethane material foamed into the interior of the door of Zen will have the propensity to bond to the steel cladding panels (3) and to the elements (5, 6, and 7) of the door frame (2) by adhesion and thereby establish a force-transmitting relationship between the core and the cladding panels. As for a mechanical coupling of the core to the cladding panels, we consider such to be provided by the fact that the expanded foamed core material is bonded to both the cladding panels and the jamb members (5) which are grooved (at 21) to receive the in-turned edges (22) of the steel cladding panels, and to which the cladding panels may be further bonded (col. 3, lines 38-42), thereby establishing an

Appeal No. 2006-0128
Application No. 10/003,353

indirect mechanical coupling of the core to the cladding panels. Like the examiner, we also view the bracing (12) in the jambs (5) of Zen's door to broadly constitute "rebar-type elements" (claim 34) that contribute to the above-noted indirect mechanical coupling of the core to the cladding panels.

Contrary to appellants' assertions in the brief, we find that there is a "reasonable" expectation of success in modifying the door system of Kennedy in view of Zen as noted above. Like the examiner, we observe that the claims on appeal do not set forth a specific level of forces or stresses to which a mine door may be subjected. Moreover, in our opinion, the steel clad door of Zen would have been readily recognized by one of ordinary skill in the art as a rigid integral structure capable of being "resistant to" stresses to which a door leaf is subjected in a mine, which is all that the claims on appeal require. Appellants have provided no evidence to the contrary.

In light of the foregoing, we have found appellants' arguments as presented in the brief, the reply brief, and corrected brief to be unpersuasive of error on the examiner's

Appeal No. 2006-0128
Application No. 10/003,353

part and thus will sustain the rejection of claims 1 through 9, 14 and 31 through 45 under 35 U.S.C. § 103(a).

Since the obviousness rejection before us on appeal has been sustained, it follows that the decision of the examiner is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

Charles E. Frankfort

Charles E. Frankfort)
Administrative Patent Judge)

Anita Pellman Gross

Anita Pellman Gross) BOARD OF PATENT
Administrative Patent Judge) APPEALS AND
) INTERFERENCES

Jennifer D. Bahr

Jennifer D. Bahr)
Administrative Patent Judge)

CEF:td1

Appeal No. 2006-0128
Application No. 10/003,353

Senniger Powers Leavitt and Roedel
One Metropolitan Square
16th Floor
St. Louis, MO 63102